

INFORMATION DISCLOSURE CITATION  
(Use several sheets if necessary)

Docket Number (Optional)

TWI-11220

Application Number

10/691,132

Applicant(s)

Jon Opsal et al.

Filing Date

October 22, 2003

Group Art Unit

Unknown 2877

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AT	WO 99/10747	01/14/1999	PCT	G01N	21/17		
	AU	WO 00/68656	11/16/2000	PCT	G01J	4/00		

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	AV	M. Fried et al., "Nondestructive determination of damage depth profiles in ion-implanted semiconductors by spectroscopic ellipsometry using different optical models," <i>J. Appl. Phys.</i> , Vol. 71, No. 6, 15 March 1992, pp. 2835-2843.
	AW	A.P. Webb et al., "Refractive index profiles induced by ion implantation into silica," <i>J. Phys. D: Appl. Phys.</i> , Vol. 9, 1976, pp. 1343-1354.
	AX	J.R. Adams, "Complex refractive index and phosphorus concentration profiles in P31 ion implanted silicon by ellipsometry and auger electron spectroscopy," <i>Surface Science</i> , Vol. 56, 1976, pp. 307-315.
	AY	J.R. Adams et al., "Determination of the complex refractive index profiles in P31 ion implanted silicon by ellipsometry," <i>Surface Science</i> , Vol. 49, 1975, pp. 441-458.
	AZ	J.P. Cortot et al., "Analysis of arsenic and phosphorus ion implanted silicon by spectroscopic ellipsometry," <i>Appl. Phys. Lett.</i> , Vol. 41, No. 1, 1 July 1982, pp. 93-95.
	BA	X-F. He et al., "Disorder effects on optical spectra and band structure of Si induced by ion implantation," <i>J. Appl. Phys.</i> , Vol. 66, No. 11, 1 December 1989, pp. 5261-5266.
	BB	T. Yamaguchi et al., "Empirical dielectric function of amorphous materials for spectroscopic ellipsometry," <i>J. Appl. Phys.</i> , Vol. 77, No. 9, 1 May 1995, pp. 4673-4676.
	BC	Kravetsky, Kulyuk et al., "Reflected optical second harmonic generation as a method for caractereization of ion-implanted, thermal annealed silicon surfaces and silicon-insulator interfaces," <i>Ion Implanted Technology</i> , Vol. 94, 1995, pp. 656-659.
	BD	D.E. Aspnes et al., "Dielectric properties of heavily doped crystalline and amorphous silicon from 1.5 to 6.0 eV," <i>Physical Review B</i> , Vol. 29, No. 2, 15 January 1984, pp. 768-779.
	BE	Y. Takeda et al., "Large third-order optical nonlinearity of tin microcrystallite-doped silica glass formed by ion implantation," <i>Appl. Phys. Lett.</i> , Vol. 63, No. 25, 20 December 1993, pp. 3420-3422.
	BF	J.M.C. England et al., "The dynamics of amorphous-to-crystalline interface evolution in ion-implanted polycrystalline silicon," <i>J. Appl. Phys.</i> , Vol. 73, No. 9, 1 May 1993, pp. 4332-4343.
	BG	E. Chason et al., "In situ energy dispersive x-ray reflectivity measurements of H ion bombardment on SiO2/Si and Si," <i>Appl. Phys. Lett.</i> , Vol. 60, No. 19, 11 May 1992, pp. 2353-2355.
	BH	Y.Z. Hu et al., "A Comparison of Argon and Hydrogen Ion Etching and Damage in the Si-SiO2 System," <i>J. Electrochem. Soc.</i> , Vol. 139, No. 7, July 1992, pp. 2022-2026.
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Examiner

Date Considered

19 JAN. 2005

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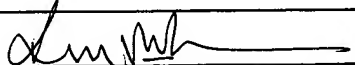
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BL	L. Chen et al., "Transient photomodulation spectroscopy of nanocrystalline hydrogenated silicon," <i>Physical Review B</i> , Vol. 39, No. 8, 15 March 1989, pp. 5121-5127.
BM	A.H.M. Holtslag et al., "Noble-gas ion bombardment on clean silicon surfaces," <i>Physical Review B</i> , Vol. 38, No. 15, 15 November 1988, pp. 10556-10570.
BN	R.E. Hummel et al., "Optical investigations of ion implant damage in silicon," <i>J. Appl. Phys.</i> , Vol. 63, No. 8, 15 April 1988, pp. 2591-2594.
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BP	J. Narayan et al., "Formation and nondestructive characterization of ion implanted silicon-on-insulator layers," <i>Appl. Phys. Lett.</i> , Vol. 51, No. 5, 3 August 1987, pp. 343-345.
BQ	P.J. McMarr et al., "Spectroscopic ellipsometry: A new tool for nondestructive depth profiling and characterization of interfaces," <i>J. Appl. Phys.</i> , Vol. 59, No. 3, 1 February 1986, pp. 694-701.
BR	X.C. Mu et al., "Ar ion beam and CCl <sub>4</sub> reactive ion etching: A comparison of etching damage and of damage passivation by hydrogen," <i>J. Appl. Phys.</i> , Vol. 58, No. 11, 1 December 1985, pp. 4282-4291.
BS	R.W. Collins et al., "A ellipsometry study of a hydrogenated amorphous silicon based n-i structure," <i>J. Appl. Phys.</i> , Vol. 57, No. 10, 15 May 1985, pp. 4566-4571.
BT	K. Vedam et al., "Nondestructive depth profiling by spectroscopic ellipsometry," <i>Appl. Phys. Lett.</i> , Vol. 47, No. 4, 15 August 1985, pp. 339-341.
BU	M. Erman et al., "Analysis of ion-implanted GaAs by Spectroscopic ellipsometry," <i>Surface Science</i> , Vol. 135, 1983, pp. 353-373.
BV	J.B. Theeten et al., "Depth profiling and interface analysis using spectroscopic ellipsometry," <i>J. Vac. Sci. Technol.</i> , Vol. 20, No. 3, March 1982, pp. 471-475.
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BY	Q. Kim & Y.S. Park, "Ellipsometric investigation of ion-implanted GaAs," <i>Surface Science</i> , Vol. 96, 1980, pp. 307-318.
BZ	Q. Kim et al., "Characterization of ion-implanted GaAs by ellipsometry," <i>J. Appl. Phys.</i> , Vol. 51, No. 4, April 1980, pp. 2024-2029.
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CB	V.M. Gusev et al., "Interference method for measuring the effective thickness of ion-implanted layers," <i>Soviet Physics - Semiconductors</i> , Vol. 5, No. 5, November 1971, pp. 737-739.

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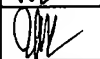



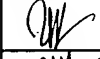
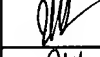
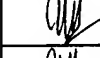

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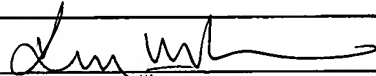
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	CC	V.V. Galkin et al., "Implantation of 10-80 keV lithium ions in diamond," <i>Soviet Physics - Semiconductors</i> , Vol. 4, No. 5, November 1970, pp. 709-716.
	CD	V.V. Galkin et al., "Ion-bombardment induced damage in diamond layers, <i>Soviet Physics - Solid State</i> , Vol. 10, No. 3, September 1968, pp. 706-708.
	CE	J.M. Leng et al., "Simultaneous measurement of six layers in a silicon on insulator film stack using spectrophotometry and beam profile reflectometry," <i>J. Appl. Phys.</i> , Vol. 81, No. 8, 15 April 1997, pp. 3570-3578.
	CF	U Zammit et al., "Optical absorption in ion implanted Si films," <i>Nuclear Instruments and Methods in Physics Research B</i> , Vol. 96, 1995, pp. 241-244.
	CG	A. Rosencwaig et al., "Thermal wave characterization of semiconductors and superconductors," <i>Review of Progress in Quantitative Nondestructive Evaluation</i> , Vol 8B, 1989, pp. 1195-1201.
	CH	J. Opsal, "Modulated interference effects and thermal wave monitoring of high-dose ion implantation in semiconductors," <i>Review of Progress in Quantitative Nondestructive Evaluation</i> , Vol 8B, 1989, pp. 1241-1245.
	CI	J. Bailey et al., "Subsurface defects in silicon investigated by modulated optical reflectance measurements," <i>Review of Progress in Quantitative Nondestructive Evaluation</i> , Vol 8B, 1989, pp. 1263-1271.
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